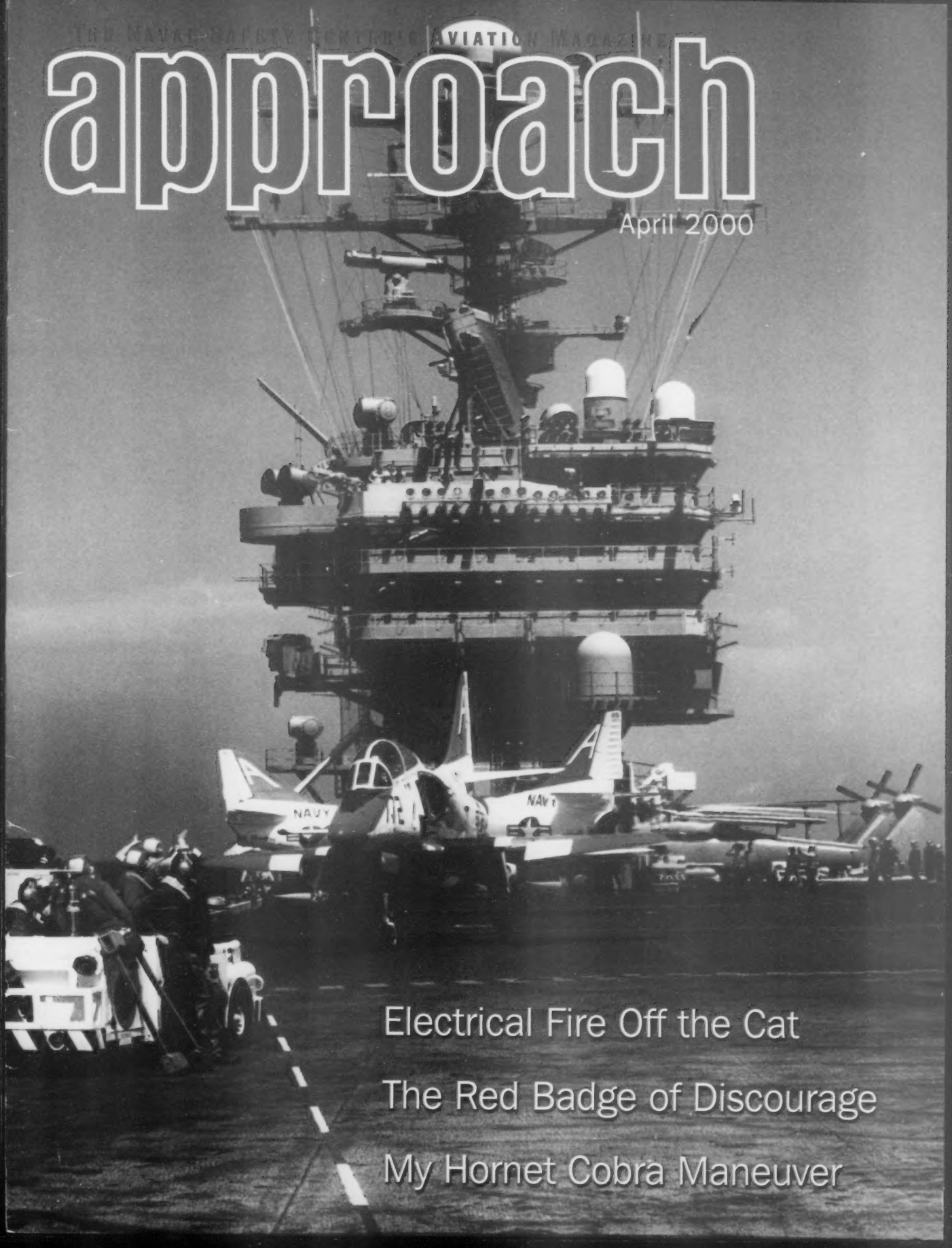
approach

April 2000



Electrical Fire Off the Cat

The Red Badge of Discourage

My Hornet Cobra Maneuver

approach

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On the Cover The last Skyhawk CQ aboard USS George *Washington*. Photo by JO1 Joshua M. Hudson
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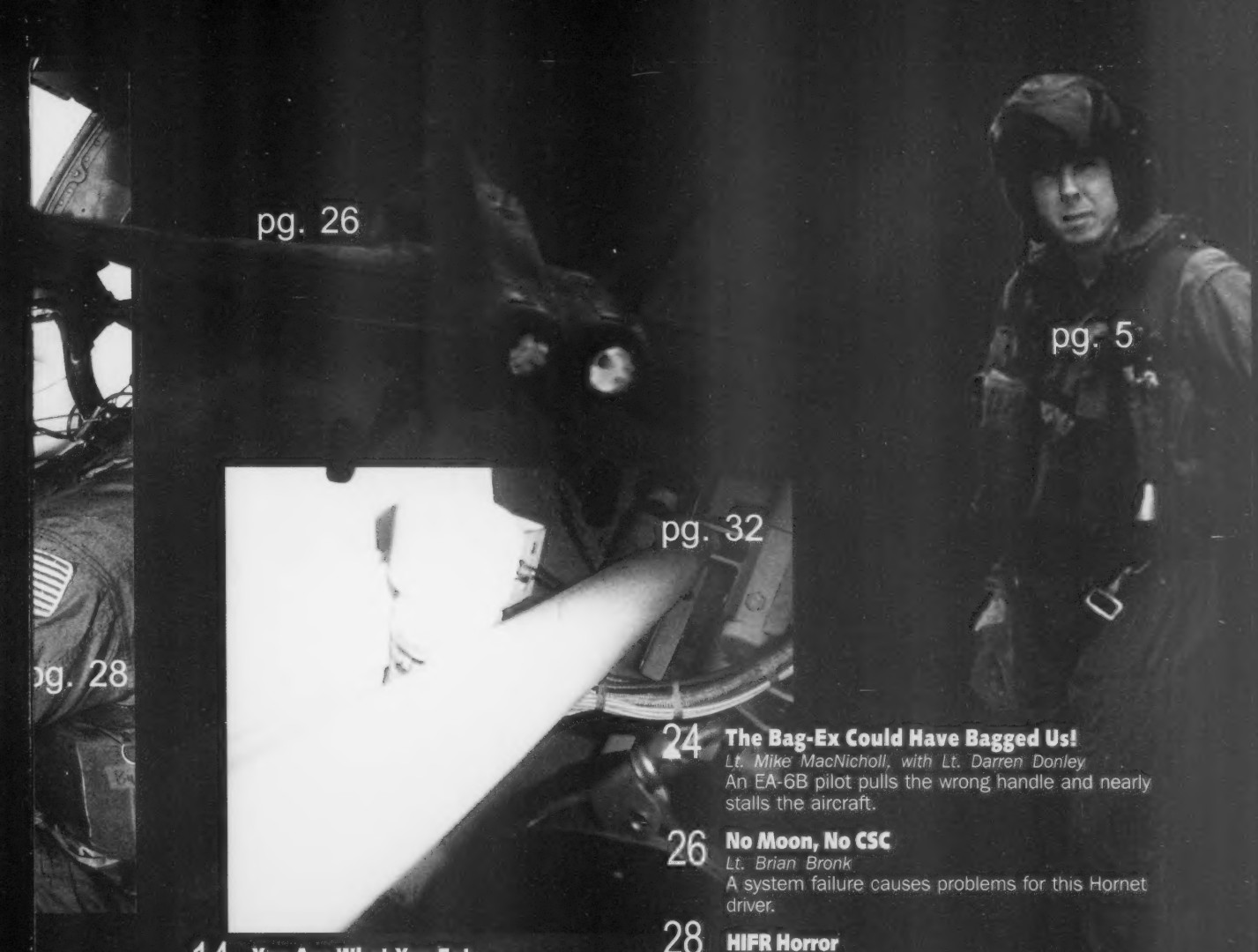

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SAR Helos in the

We published an overview of shorebased hurricane SAR in the February issue ("Rescuing the People At Home"). Here's a variation on the great work many squadron crews did in this most difficult of domestic emergencies in recent years.

by Lt. Christopher L. Pesile

Hurricane Floyd was threatening the northeastern coast of Florida, so the carrier headed out to sea to ride out the storm. Our squadron was supposed to depart on cruise in a few days, so we flew all seven of our Seahawk helicopters aboard the ship and hastily assembled a hurrevac det. Leaving my family to fend for themselves, especially with my imminent departure on cruise looming, had been hard to do, but little did I know that there were eight people who were in much greater need of our help at that moment.

Early on the morning of Sept.15, 1999, the carrier got an urgent request for help from Coast Guard Station Miami. At 0730, the oceangoing tug *Gulf Majesty* had transmitted a mayday as it foundered in heavy seas approximately 300 miles off Jacksonville. Within minutes, all eight crew members were forced to abandon ship into a 15-man life raft amid immense waves and howling winds.

Our det OinC and I met with the admiral, his staff and key ship personnel. Weather in the vicinity was the worst I'd ever seen, but we decided to try a rescue in these hurricane-like conditions. The carrier turned back into the storm from its position about 450 miles off the coast of Jacksonville. Waves breaking over its 70-foot-high deck made the ship lose eight of its life rafts as she turned back toward the rescue site.

We had two HH-60Hs, each with a crew of four: two pilots, a hoist operator and a rescue swimmer. Our helicopters had been safely tucked away in the hangar bay, and our maintainers and ship's personnel did a great job of preparing them for flight and quickly moving them to the flight deck. We briefed the mission as we closed to within 130 miles of the datum and launched from the carrier about 1030. As we got closer, the direction-finding equipment on the lead helo led us toward the raft's emergency locator transmitter (ELT). We

A rescue swimmer rides the hoist up with one of the tug crewmen.

Storm

reached the datum around 1145 and spotted debris in the water, then continued to home in on the signal from the ELT. I was the HAC for Dash 2.

As we flew toward the signal, one of my crewmen spotted an orange smoke set off by three survivors in the water. We immediately turned to mark on top of their position and dropped a marine smoke marker next to them. Then Dash 1 approached the survivors to pick them up. The 50-knot winds and 20-to-25-foot seas pummeled the rescue swimmer and survivors, but all three survivors were soon in the helicopter. Dash 1 radioed that these survivors had gotten separated from the raft when its tether line parted as they tried to abandon ship. They had miraculously held onto each other and the ELT for more than four hours in the mountainous waves. Now, there were five more survivors still adrift in a raft with no ELT.

We made a sector search of the immediate area, but after 30 minutes, we hit bingo fuel and both aircraft returned to the carrier to refuel and drop off the survivors.

Lead refueled first and departed on the second rescue attempt around 1400, and we launched five minutes later. I had an extra rescue swimmer to provide an additional set of eyes in the aircraft, now that we would be doing a purely visual search.

As we approached the datum, the weather began to deteriorate. We were forced to descend from 1,000 feet to 500 feet, then to 300 feet. The winds were now 55 knots sustained, gusting to 70, and the seas were over 30 feet.

As we flew around one of the thundercells, we spotted the 750-foot barge that the tugboat had been pulling before it sank. We circled the barge several times to make sure that no one had gotten aboard her, but it was abandoned.

While our wingman searched another sector, we decided to search for the raft upwind, figuring a barge broadside to the wind would blow farther than a small raft with a sea anchor.

Crewmen from the tug leave the HS-11 helo on the *Kennedy*'s flight deck.

© Jared Rudd

...little did I know that there were eight people who were in much greater need of our help at that moment...

A rescue swimmer reaches the life raft containing five crewmen from the *Gulf Majesty*.

We made the barge the new datum and did a ladder search with 2-mile legs back upwind toward that morning's survivor-pickup point. Our search altitude was still 300 feet, and we tried to keep our airspeed about 70 knots to maximize our power excess to battle the winds.

Flying crosswind to 55 knots of wind was hard as we made turns in the search pattern. We were in and out of driving rain as we searched with visibility going from 3 miles to less than one-eighth of a mile, testing our crew coordination and flying skills. I got vertigo at one point, and my copilot talked me through that while we continued to update the search plan in those challenging conditions.

A member of Kennedy's medical department monitors a crewman from the ill-fated tug on one of the carrier's flight-deck elevators.

After 45 minutes of searching, the minor miracle we needed occurred as we flew through an area of less than one-eighth of a mile visibility and happened to spot the raft directly below us. My copilot yelled, "On top, on top!" and we dropped a smoke marker, then turned back toward the raft into the wind and entered the hover.

Now it was time to earn our flight pay as the aircraft's automatic flight-control system (AFCS) began to malfunction. My copilot backed me up on instruments in the IMC hover as the radar altimeter fluctuated over 30 feet and huge waves passed under the aircraft. The AFCS would also kick off from time to time as the helicopter tried to maintain a steady hover.

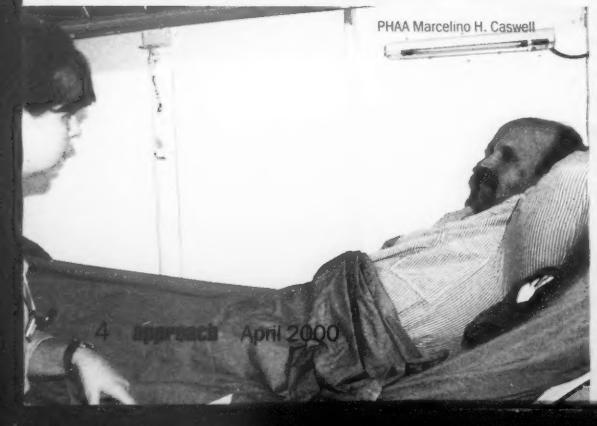
My copilot took over the radios so I could listen exclusively to the hoist operator and concentrate on manually flying the hover. The rescue swimmer elected to stay attached to the rescue hook because of the severe conditions. First, we tried verbal control to put the swimmer near the raft, but that didn't work because of the high winds. I couldn't correct the aircraft fast enough, based on the hoist operator's directions. Next, we tried letting the hoist operator position the aircraft, using the crew hover joystick at the rescue station, but its authority was too limited in those conditions. Thus, we were forced to revert to manually hovering with the raft at the 2:30 position.

The swimmer got a survivor out of the raft and into the water. I followed them as they were tossed by the waves until they gave a pickup signal and were raised up by the hoist. Finally, I eased the aircraft back toward the raft, put it at 2:30, then did the whole routine again.

After 35 minutes in a hover, the combined efforts of both rescue swimmers brought all five survivors aboard. We rendezvoused with lead and returned to the carrier, mission accomplished.

There is no substitute for good crew coordination. It's definitely a force multiplier. When everyone pulls together, you can accomplish difficult missions, despite the conditions. We had several junior crewmen on board both aircraft and some pilots who had never flown actual rescues before. Our fearless rescue swimmers were the true heroes of the mission. We combined thorough knowledge of aircraft capabilities and the mission, with great crew coordination in the cockpit. Coordination between aircraft and all rescue–mission command and control elements were the other reasons we could rescue eight men from the clutches of Hurricane Floyd.

Lt. Pesile flies with HS-11.



A tug crewman relaxes in the *Kennedy's* sick bay under the care of an officer from the ship's medical department.

Who Should Call, "Knock It Off"?

by Lt. Shelby Mounts

Tonight was the big night for crossing the century mark on night-vision goggles. The brief and hot-seat went smoothly, but we noticed isolated rain showers and cloud buildup. No big deal. We could get in some good instrument work. We launched into the rapidly fading "pinky time," knocked out our Doppler requal, and requested a CCA pickup. That's where the internal alarms started ringing.

As center vectored us downwind, we noticed the first of a rapidly increasing number of cloud-to-cloud lightning bolts. Suddenly, it was pitch black in front of us, with pouring rain and lightning a couple of miles ahead. Without much prodding from me, my HAC asked the ship for vectors away from the storm or an immediate break-off.

Center cancelled our approach as we turned back into starboard-D, where it was still clear. The lightning had developed in every quadrant now, and we provided a PIREP about the limited visibility and lightning. Tower asked us to come in aided, so we began goggling up. At this point, no Marine birds were off the deck yet, and we could sense the hesitation as they probed us for more weather info.

One crew cancelled for a mechanical problem, but the other three seemed willing to give it a go. By the time we had our goggles on, tower called us in for an uneventful landing. Sitting on deck for a hot pump, we watched in amazement as tower cleared the three Marine helos to lift into the delta for "acclimatization." My HAC called the tower flower and said that if it was up to us, "We'd cancel because of the limited visibility and poor weather."

Now, all the alarms were going off in our heads. This far into cruise with no real mission other than night-training was not the best time to be pushing the envelope. I guess the final prompt from my HAC, along with the feedback from the Marines in the air, was enough to convince the ACE CO, who called, "Knock it off."

We constantly struggle to infuse the relatively new Operational Risk Management process into our daily operations. Mindsets are hard to change, and the very nature of our business requires that we often rise above our fears to accomplish our mission. ORM does not give us concrete examples of where to draw the line; it leaves the decision with the aircraft commander.

ORM illuminates possible dangers and tries to minimize them, but the gut-check call is based largely on nebulous factors. After talking with many others after flight ops was secured, we realized everyone was questioning the wisdom of flying in those conditions.

Who should call, "Knock it off"? For me, I know more than ever that it can be anyone, and we all have to guard against the tendency to tough it out or rely on others to make our safety calls.

Lt. Mounts flies with HC-11.

Capt. Brynn Schrein

"Whoa!"

Time slowed down as I replayed events, verified that we had, in fact, hit our numbers, and we were, in fact, about to die.

by LCdr. Gordon Smith

Not the thing you want to hear from your pilot at the bottom of a low pull-out at the end of a 45-degree bombing run.

Let's start at the beginning. Some guy named Saddam Hussein hardly rated page five in the *Union Tribune*, and Wednesday was still the highlight of the week at the O Club. We Tomcat crews had just begun hurling blue death and ourselves at the ground. Our squadron was the first to go through the fledgling Strike Weapons School's brand-new "Bombcat" syllabus. For two days, we sat in a darkened room listening to lectures and looking at hand-drawn overheads, learning how to circle the wagons around some helpless soul in a foxhole. Weaponeering was still a black art to be tackled at some later date.

I was a first-tour RIO, teamed with a salty cruise-experienced pilot I'll call "Bobo." Bobo was known for two things: his calm, good-natured demeanor and his incessant drive to sneak in a workout at every opportunity. Little did I know that it was this second characteristic that would save our lives.

One summer morning, Bobo and I were scheduled to lead a section of Mk-76-toting Toms to NAS Fallon's Bravo 19 Range. We thoroughly briefed the mission, emphasizing the Z-diagram numbers and crew coordination. Our launch and transit went without a hitch, and soon we were in the range. Finding the nuke bull was easy, even for an air-to-ground newbie like me.

Flying low over the target on our spacer pass, I got a good look at the sand and tumbleweeds of the Nevada desert and the smoothly bulldozed surface of the target.

"Our hundred pounds of blue death aren't going to do much to this sucker," I thought as we pulled up into the pattern for our first run.

Rolling in from 14,000 feet AGL, the bull looked very far away.

"Twenty, thirty degrees, four hundred and fifty knots, forty-five degrees, four eighty," I

called, watching our dive angle and airspeed increase. The bull got steadily larger.

"Track, stand by," I recited as we hit each altitude, and Bobo maneuvered the jet to put the HUD's bomb-fall line over the target. I called, "Mark," and he pickled our first bomb as the rings of the target filled the windscreen. After a potato (the standard naval–aviation unit of time) and no discernable pull-up, I called "Pull," thinking that Bobo might be fixated on the target.

I felt the onset of G and began to relax. The pull ended abruptly, however, and we were still pointing at the ground and accelerating. Within a second, the outer rings of the bull seemed to spread from wingtip to wingtip. We were well out of the safe ejection envelope and not looking good.

Time slowed down as I replayed events, verified that we had, in fact, hit our numbers, and we were, in fact, about to die. As I managed to get out a more emphatic, "Pull!" I felt a slight negative-G bunt followed by a healthy 7-G pullout. As we climbed steeply back through 1,000 feet AGL, Bobo summed up his feelings, "Whoa."

"What happened?" I asked, somewhat less coolly, recalling the vivid image of one particularly large tumbleweed.

"I went to pull out, and the stick wouldn't come back," he replied in a surprised tone. "So I pulled really hard."

We agreed that we were done with negative-flight-path-angle exercises for the day and let Dash 2 know we would be holding overhead doing some troubleshooting while they finished their runs.

We briefly discussed diverting to NAS Fallon, but instead opted to return to NAS Miramar for a straight-in approach, thinking of the inconvenience associated with coordinating a rescue det on a Friday afternoon. About halfway home, Dash 2 began having some electrical problems, followed by a cooling air light—not a good thing in a Tomcat. We were abeam Point Mugu, and they neatly peeled away and landed ASAP, thinking they were the ones in danger. The rest of our RTB and straight-in recovery went uneventfully.

In our debrief, we discussed crew coordination and the process of deciding to eject. As much as I'd like to say I came out of it with some good lessons learned, the fact of the matter was that there simply hadn't been enough time to completely understand and adequately communicate what was happening. For a brief moment, we were both simply along for the ride. Our options had been simple: Go out in a huge fireball, or get ripped to shreds in a 500-knot ejection. A little luck and a lot of strength were the only things that kept us out of the Nevada soil that day.

The culprit turned out to be a small, aluminum dust cap from a hydraulic jenny. It must have fallen out of someone's pocket during maintenance or rework. After a time, it found its way under a console in the front cockpit where it rolled around between the control rods. During our initial roll-in, the high dive angle and 1-G acceleration allowed it to roll into a tight spot between the horizontal-stab control rod and a bulkhead.

Bobo's initial pull firmly lodged it there, and his subsequent pull flattened it like a penny left on a railroad track. We never did find out where it had come from, and for all we knew it could have been rattling around the plane for years before it came to its final resting place. It's hard to say if the massive impact and subsequent fire would have left any trace of such a seemingly insignificant piece of metal. It's more likely that the apparent case of CFIT would have been blamed primarily on a loss of aircrew SA, followed by a delayed ejection decision, rather than FOD in the cockpit.

Postscript: Nearly a decade and 2,000 hours later, I still look back on this event with uneasiness. Much has changed in naval aviation; training is better, ORM gives safety the respect it deserves, and as a whole, we aviators are smarter. None of these improvements, however, would have prevented this potential tragedy caused by someone's negligence. Human nature will always be the weak link in the safety chain.

LCdr. Smith now flies with VAQ-131.

My Vibrating Approach

by Ltjg. Neil J. Hoffman

Your first "real" in-flight emergency makes you realize what we do for a living is sometimes dangerous. I was on my first cruise as an H2P, with an SH-60B detachment attached to a guided-missile cruiser in the Arabian Gulf. After conducting maritime-interdiction operations for almost two months, I was comfortable with the area and our mission. Then we launched on a mid-morning flight, and I found out how quickly events could change for the worse.

With our morning's tasking complete and our recovery not for another hour or so, we took the opportunity to visually identify a few of the nearby surface contacts in the Northern Arabian Gulf. The HAC in the left seat checked our distance from the ship and decided that it was about time to head home.

"Roger that!" I replied. I had had enough fun that morning and began to make preparations to navigate back to the ship. Accelerating to 120 KIAS, we turned the direction the TACAN indicated, with 60 nautical miles to go.

"SENSO, did you hear a bang or a pop overhead?" the HAC asked over the ICS just after the nose of the aircraft yawed slightly to the left. The aircrewman had noticed it as well and said, "Yep, I heard it." All three of us had both felt and heard the muffled "bang" or "pop," which seemed to come from somewhere on top of the helicopter. Here lies the first step in any emergency situation: "Aviate."

The HAC slowed the aircraft and checked for controllability as we all investigated the cause of the noise. We continued to monitor the controls and instruments while proceeding to the second step in any emergency, "Navigate." The aircraft was already headed toward home, making that step easy enough.

Before we could complete the third step, "Communicate," the aircraft developed a lateral vibration, minor at first, but steadily increasing in severity. We discussed and ruled out the possibility of a bird strike and agreed the vibration was most likely caused by a main-rotor damper malfunction.

Not being on the controls at the time, I opened my pocket checklist to find the NATOPS procedures for a main-rotor damper system malfunction as briefed before the flight.

As I continued with the checklist, the vibration increased until we felt it throughout the entire airframe. Assessing the vibrations as being severe, the HAC completed the third step by declaring an in-flight emergency and informed the aircraft controller aboard our ship we needed to land as soon as possible.

The controller immediately responded, "DDG at your three o'clock, fifteen miles." Fifteen miles sounded a lot better than 60, so I dialed in the destroyer's TACAN channel as the HAC began a 90-degree right turn.

As we reviewed the NATOPS emergency procedures, the controller coordinated the setting of emergency flight quarters on both the destroyer, as well as our ship, while our aircrewman provided radar vectors to the destroyer until we could see it.

Ten minutes after the onset of the emergency and five miles from landing, flight quarters were manned and ready and a green deck for recovery established. Once we were talking with the people on the destroyer, we briefed the tower to keep everyone clear of the flight deck and not to put chocks and chains on the aircraft until we shut down.

On approach to landing, we discussed as a crew how to secure the engines immediately after landing and the use the rotor brake depending on the severity of the vibrations. Decelerating through 60 KIAS, we felt the vibrations diminish and nearly disappear, and continued the approach to arrive over the flight deck in a stable hover. Since the HAC was flying the right-to-left approach from the left seat, I backed him up, giving a few "easy right" calls once over the deck to help maneuver the helicopter over the center of the flight deck.

On touchdown, I reached up and began to move one of the power-control levers for the engines to "off," and the aircraft began to shake violently. The HAC managed to keep the aircraft on the flight deck while I struggled to reach the second power-control lever because of the heavy vibrations.

My third attempt to secure the engine was finally successful, and I applied the rotor brake. The rest of the shutdown was uneventful and during the postflight inspection, we found a ruptured main-rotor hose, which made the accumulator lose all its hydraulic fluid, resulting in the system failure.

We pilots sometimes forget that PCLs don't contain all the information available to handle an emergency. In this case, there is a caution in the NATOPS manual that says to confirm the non-flying pilot's hand is on both power-control levers to make sure you can retard them quickly on touchdown. If one of us had known this warning, I wouldn't have had so much trouble when the helicopter started shaking again.

This experience also reaffirmed for me the importance of crew coordination. The person on the other end of the radio is an important and often forgotten member of an aircrew. In this case, the controller provided immediate information that helped us make the best decision for a safe landing. The entire aircrew was included and participated in the successful landing, each person possessing an essential piece of the puzzle for success.

Ltjg. Hoffman flies with HSL-37's Det 6.

We briefed the tower to keep everyone clear of the flight deck and not to put chocks and chains on the aircraft until we shut down.

THE RED BADGE OF DISCOURAGE

by LCdr. Chuck Minter

To this day, I still fondly recall the words drilled into every graduate of Aviation Officer Candidate School by their friendly Marine Corps drill instructor: "Lack of attention to detail can get you killed, can-de-date!" If nothing else, it can definitely make you look bad.

As a nugget ECMO, I was on one of my first good-deal cross-country hops since hitting the fleet. The skipper let us borrow the keys to one of his jets, and we soon found ourselves landing at an old reserve Army base, which was hosting a small air show. As the field was unfamiliar and getting on in years, we had briefed some precautions to minimize the chance of FOD ruining one of our fine Prowler engines.

Having previously coordinated with tower, we shut down both engines after exiting the runway and had the jet towed to the display area. This turned out to be a prudent idea as later inspection of the taxiways turned up an alarming amount of FOD in the form of small rocks.

Patting ourselves on our backs for our foresight, we proceeded to organize our static display and enjoy the local festivities. It wasn't until starting the trip home that trouble found us.

After a weekend of highly successful salesmanship on behalf of naval aviation, we manned up for the return flight home. Again, our focus was on FOD prevention. Before starting up, we had our EA-6B towed out to the hold-short, where we conducted a thorough FOD walkdown. Since we were the first jet to depart, numerous enthusiastic air-show fans were still in the area and continued to ask the standard litany of questions during the FOD walkdown and preflight.

Relegated to one of the back seats, my minimum preflight responsibilities included inspecting the jammer pods and the top side of the Prowler. While climbing around on the wings and upper fuselage as part of my preflight, I noticed the pilot still pausing to sign an autograph and answer a few last-minute questions posed by a determined attendee. I remember shaking my head and chuckling at the time, but the events soon to follow would remove much of the humor from the situation.

With no Prowler-experienced ground crew to launch us, we were largely on our own to get the jet started and buttoned up for launch. With air-show security finally escorting the last fan out of the area, we quickly finished our preflight, manned up and

I noticed the pilot still pausing to sign an autograph and answer a few last-minute questions posed by a determined attendee.

started the engines. Efficiently finishing our before-takeoff checklists, we were soon ready for launch.

As we ran our engines up for takeoff, I could see numerous die-hard fans in the distance clamping their hands to their ears in an effort to block out the noise of our twin J-52s. After takeoff, the pilot called, "Gear," as he raised the gear handle. Everything was completely normal up to then. A second later, he said, "I think we have a problem. The right main gear is still indicating down and locked."

Sure enough, several seconds later, the control tower called to say it appeared that our right mainmount had not retracted. As we took up holding over the field, I remember thinking that the fans were probably happily snapping away with their Nikons.

After exhausting the appropriate emergency checklists, we elected to divert to a nearby Navy base to continue troubleshooting and make an arrested landing. The remaining two landing gear extended flawlessly, followed by an uneventful arrested landing.

After we were towed to the transient line, we climbed out to inspect the faulty landing gear. A hasty query of the ground crew seemed to indicate that they had noticed "nothing unusual" while pinning the gear for us when we were still in the wire. Initial inspection of the right mainmount revealed a generous smattering of red residue coating the white front side of the strut. Red residue? Hydraulic fluid is red. Well, we thought, clearly some sort of hydraulic problem.

The pilot went off to call the skipper while we tried to get a better idea of just what had gone wrong. Then, our salty mission commander, new callsign, "Sherlock," made a remarkable discovery. The end of the very frayed "Remove before flight" pennant attached to the right, main landing-gear pin exactly matched up with the top edge of the red residue on the landing gear strut. Whoops. To make a long story even longer, the next call to the skipper was a little less pleasant, and he didn't hesitate to point out that the landing gear retracts a lot better when the pins are removed.

Lessons learned? It doesn't take a rocket scientist to tell you it's not a good idea to let yourself get distracted during your preflight inspection, especially at a remote location where the ground-support crew is unfamiliar with your aircraft. We should have insisted that air-show security move the spectators before starting our preflight inspection. I could have also backed up my crewmates and done more than my minimum preflight inspection.

As the skipper would later relate in some detail, we could have skipped over a more critical item and ended up another Class-A statistic. My old AOCS gunny had it right.

LCdr. Minter is an ECMO with VAQ-134.

Electrical Fir

by Lcdr. T.F. Cimicata

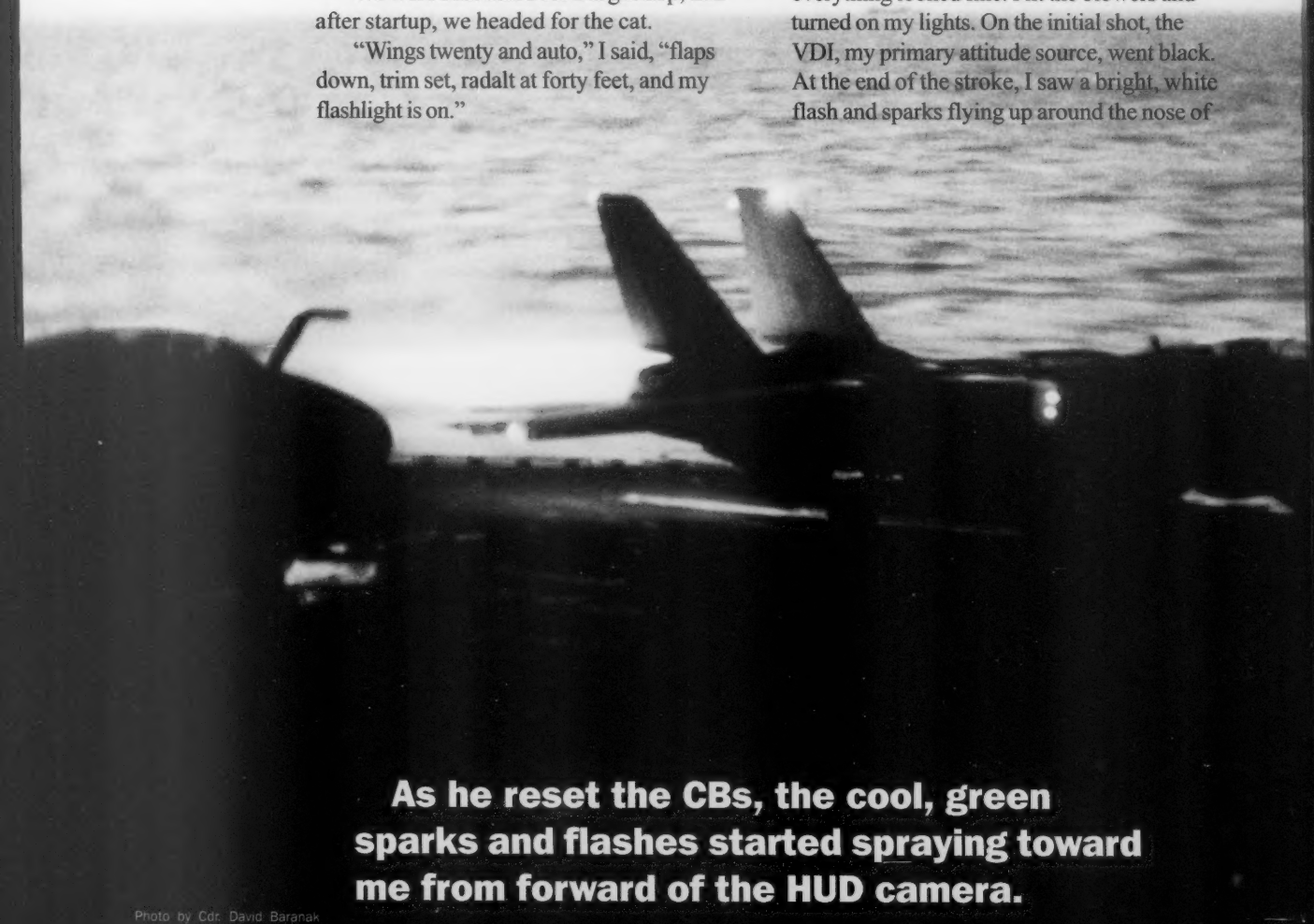
I had been in the squadron only a few weeks. Having just completed CQs in the FRS, I had less than 20 night cat shots and arrested landings under my belt. I had moved to Japan just a few days afterward so I could be in the window to bounce at Iwo Jima and make the fall at-sea period with the only forward-deployed Tomcat squadron.

We were scheduled for a night hop, and after startup, we headed for the cat.

"Wings twenty and auto," I said, "flaps down, trim set, radalt at forty feet, and my flashlight is on."

I had picked up that last tip from a more senior pilot earlier that day while discussing the importance of using a flashlight on night cat shots. Because of the stories I had heard about the dependability of some of the Tomcat's systems, I thought this was a good idea.

We got the signal to take tension, and everything looked fine. I lit the blowers and turned on my lights. On the initial shot, the VDI, my primary attitude source, went black. At the end of the stroke, I saw a bright, white flash and sparks flying up around the nose of



As he reset the CBs, the cool, green sparks and flashes started spraying toward me from forward of the HUD camera.

Photo by Cdr. David Baranak

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my aircraft. The flash was bright enough to destroy my night vision, and I thought all of the cockpit lights had gone out. The HUD was useless because the bright flashes obscured the display. If it weren't for the red spotlight coming from under my right arm toward the standby gyro, I wouldn't have had a reference to use on rotation. There was no horizon because ceilings were below 2,000 feet, and visibility was less than 2 miles.

As my night vision returned, I realized that only the VDI had gone out. Because I thought the sparks had come from outside the aircraft, I wasn't concerned. I initially thought it was one more cool thing that happened on cat shots.

As we stabilized our climb through 1,500 feet, I told my RIO the VDI was out. He replied that the circuit breakers had popped, and he would reset them–standard practice in the F-14.

As he reset the CBs, the cool, green sparks and flashes started spraying toward me from forward of the HUD camera. The CBs popped out immediately, but the sparks and smoke didn't stop like before. Once I saw the smoke, boldface procedures came to mind. I reached for the generator switches and heard a call from behind me to make sure they were secured. The emergency generator kicked in, and the light show stopped. All that was left was a little white smoke in the cockpit and the smell of burnt plastic.

I turned off the VDI power switch and spent the next few minutes troubleshooting and trying to stay VFR. We eventually got both generators back on line and had everything working except the VDI. We adjusted our gross weight, and the ship brought us aboard for an OK 1-wire. Thanks, paddles. I still had my flashlight on.

Looking back, I learned a few valuable lessons. First, something as simple as a flashlight can save your life. My checklist now includes change 1: flashlight on the standby gyro.

The second lesson came up during the debrief. As we were climbing safely and under control, why reset circuit breakers at 1,500 feet on a dark, stormy night, with a nugget in the driver's seat? A few seconds of discussion to pin down what happened may have brought us to the conclusion that leaving the CBs out would have been a better course of action.

Third, ignorance is bliss. If I had known we were seconds away from starting a fire in the cockpit, I wouldn't have thought the light show off the cat was so cool.

Ltjg. Cimicata flies with VF-154.

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Electrical Fir

by Ltjg. T.F. Cimicata

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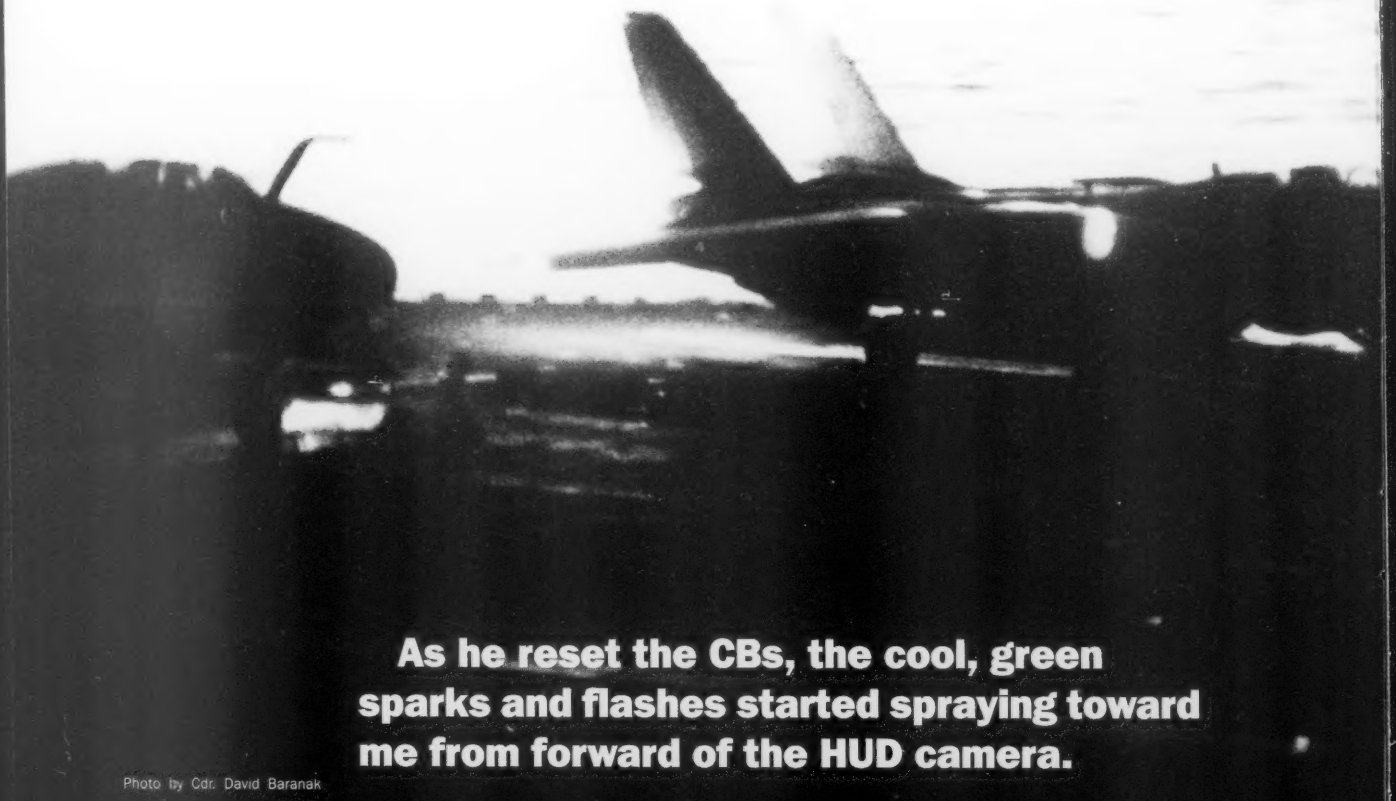

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You Are What You

by Lt. Kevin Gallo

We made our operational power checks on all three engines enroute to our operating area. The power checks would tell us how much torque each engine could produce. It was a cool, winter day, and the MH-53E was relatively light, so this procedure was nearly a formality. All three engines produced ample power, though the No.2 engine was considerably weaker than the other two. I relayed this probably insignificant piece of information to the crew and filed it away.

Operations proceeded uneventfully enough at LZ Phoenix. The landing zone was named after a recommissioned squadron's call sign. We were training on the external transport of cargo, using the helicopter's single-point cargo hook. The student pilot hovered over the load for his third lift. The load was a metal I-beam that weighed 8,000 pounds. The student was enthusiastic, and it was his job to overcome the devious metal I-beam.

On the first lift, the I-beam, though still on the deck, had kept moving below the helicopter, jinking to the left and right, forward and back. Understandably, the student had to constantly shift his hover in a near-futile effort to stay immediately above the load. By the third lift, the I-beam was considerably more stable, because the student was doing a good job controlling the aircraft.

So here we were, hovering at about 10 feet. The four-man ground crew had just attached the straps on the I-beam to the helo's single-point, external-cargo pendant. We started to climb straight up to put tension on the load. The ground crew would stay beneath the aircraft at this time, ensuring the rigging didn't get tangled. Then we would ensure that they cleared out from the area before we actually lifted the load off the deck. I, for one, wouldn't want to stand next to 8,000 pounds of building material as it swung through the air.

As we increased power and started to climb to a higher hover, a loud bang came from the cabin. It had to have been loud because we heard it. Softer sounds, like those heard at a rock concert, are barely audible over the helicopter's freight-train roar. The jaygee student froze the controls as I called over the ICS, "What was that?"

My first thought was that something was wrong with the rigging—maybe a strap had frayed and snapped. But I was looking at the load in my mirror, and everything looked fine. (MH-53Es have adjustable mirrors on appendages off the nose of the aircraft, like catfish whiskers. Designed for monitoring minesweeping equipment, they're also useful for external operations.) My second thought was that a window or door had slammed shut.

After a few seconds of silence, my concern grew, and I took the controls. Although the student was flying well, this was his first time doing such an operation in this aircraft, and there wasn't much room for error. Remember that we still had the load attached, and there were still four people under us. Inadvertently lifting the I-beam or letting the aircraft settle to the ground wouldn't be good.

No sooner had I taken the controls than the aerial observer, an experienced crew chief, noticed the No. 2 engine's fuel-flow gauge read zero. He immediately called, "Number two engine."

Hearing this, I immediately looked at the torque gauge and saw that the engine wasn't producing power. Loud bang plus no torque equaled compressor stall. To confirm the theory, I glanced at the T5 gauge and noticed the needle rising like a second hand going through 9 o'clock–an overtemp condition and typical symptom of a compressor stall. Fortunately, the remaining two engines easily produced enough power without allowing any settling or perceptible droop in rotor speed.

All of this happened within 10 seconds, and I pickled the load. Once again, the mirror proved valuable as I could see that the load was completely released without having to get confirmation from a crewman. I then said over the ICS that we had a No. 2 engine compressor stall and were going to land.

As briefed with the ground crew for an emergency in a hover, we slid forward and to the left before landing. Ordinarily, I would wait the few extra seconds until landing before doing any other emergency procedures, but a compressor stall, especially with the No. 2 engine, presents a high probability of an ensuing engine-compartment fire. Consequently, I told the copilot to secure the No. 2 engine. He quickly put his hand on the No. 2 engine speed-control lever, getting confirmation from me that this was the correct engine, and secured the engine. The crew cleared us below, and we landed softly in the grass.

Still concerned about a possible fire, I asked, "Anybody see any smoke or anything around the engine."

A crewman responded, "I think we got some smoke around the number two."

The student prepared to blow the fire bottle, and he put his hand on the No. 2 engine fire T-handle. Pulling the T-handle, located on the cockpit overhead, and pressing another switch would discharge a fire-extinguishing agent into the engine compartment. I then asked the crew about the status of the fire, to which the crew chief responded, "Don't think we got a fire back here. Don't see any more smoke."

With that bit of good news, we did not use the fire bottle but did expeditiously secure the engines and rotor. Postflight inspection revealed there had been a flash fire in the engine compartment. It would have gotten quite a bit worse if we had let the engine run much longer.

Further inspection (this time by QA reps) revealed the probable cause of the compressor stall. At the intake of each engine, the MH-53E has something called an engine air-particle separator (EAPS). It's a simple device designed to prevent the engine from ingesting FOD, such as bolts, rivets and washers. Ironically, in this case, a rivet from the EAPS had probably caused the compressor stall. We had preflighted the engine intake and EAPS barrel. Upon postflight, QA found a missing rivet at the front of the EAPS.

As a result of this potential mishap, squadron pilots and aircrew are paying closer attention to the EAPS barrels during preflight. The squadron has people who specifically examine the EAPS as part of daily inspections. Furthermore, a minor design modification of the EAPS was already in work at the time of the incident, and all squadron aircraft have incorporated this airframe change.

I should have noted the power the engines had produced on previous flights and returned to base if the weak No. 2 engine was a new abnormality. Good aircrew coordination prevented further problems, but even here, it's debatable whether I should have taken the controls after the compressor stall. In retrospect, I think that the transfer of control added an unnecessary complication, and it would have been easier to diagnose the problem and do the appropriate emergency procedures while not having to worry about maintaining a stable hover. We were fortunate to have not learned these lessons at a much higher price.

Lt. Gallo flies with HMT-302.

A Long Way To Go For Chicken Shawarma Takeou

by Lt. John Picco

Our carrier and air wing had received orders to make an emergency deployment to the Persian Gulf. We were reacting to Saddam Hussein's flouting of UN demands that he disclose and allow inspection of sites developing nuclear and biological weapons. In the rush to gather all our trash and get underway within the allotted seven days—not to mention knocking out a quick round of FCLPs and CQ—the atmosphere was chaotic and tense. During the transit, we had barely settled down and grown comfortable with the idea of an extended deployment in a combat zone when we found ourselves perched off the coast of Oman. We were preparing to fly a couple of days of warm-up sorties before entering the Gulf and taking on the responsibilities of staring down the Iraqi menace.

During our two-week transit, we conducted day after endless day of training. We covered all the highlights: rules of engagement, tactics, smart weapons, desert survival, the use of AKAC code cards, and search and rescue. And somewhere in the schedule, crammed in between "The Bedouin: Our Mysterious Desert Friends," and "I Survived A Rabid Camel Attack: True Stories Of Desert Survival," was the brief on divert fields. Yeah, sure, Oman, whatever. If I had realized I would soon become intimately familiar with one of these little sand-whipped desert oases, I might not have dozed through that particular brief.

After joining up with my lead on the second day of cyclic ops, we proceeded on our mission, after which we returned to low holding at 2,000 feet for the last Case I

recovery of the day. The launch took longer than expected as cat 4 went down, and by the time we broke the deck, gas was beginning to become an issue for me.

The deck was fouled after my lead landed. That was strike one. Another lap around the pattern behind four other Hornets, and—strike two—a bolter. My third pass was "trick or treat." You can see where this was going. Another foul-deck waveoff for strike three.

With the signal to bingo, I accelerated to get on my numbers and headed toward–where?–Seeb International Airfield in Oman. Accompanied by a new wingman, a Hornet behind me in the pattern, we stepped through the countless frequencies as we flew the profile. It soon became apparent that the Seeb controllers hadn't been told of their selection as my primary divert field and were none too happy about our imminent arrival. They ordered us repeatedly and unequivocally to proceed south to Masirah, the secondary divert field, another 80 miles away.

For the third time, I declared, "Chippy Four Oh Four is on an emergency divert for low fuel and will be proceeding west for Seeb International." The controllers finally capitulated and began giving us vectors. To make things just a bit sportier, it was now dark.

Eventually, the lights of Seeb came into sight, and we completed an uneventful landing and taxi. Uneventful, that is, up until the point where we shut down. Out of the darkness, 20 soldiers appeared, some with weapons at the ready. Once we got over our initial alarm at this unexpected sight, however, it became apparent that they were mostly motivated by honest curiosity and just wanted to see an FA-18. No one spoke English, however, and we were resigned to sleeping in the ducts all night before trying to refuel in the morning.

Just then, a Toyota 4Runner came screeching into view and skidded to a halt on the ramp next to our jets. An American got out, and we soon learned that he was the U.S. attache to Oman. He had arranged for fuel trucks and for security in the form of U.S. Marines standing guard overnight. We were quite happy to learn that we would also have beds to sleep in, a far more appealing prospect than the Hornet's intake ducts. As it turned out, our divert had political ramifications far beyond what we realized. The U.S. Embassy became involved when the Sultan of Oman, wary of the political consequences of appearing to lend direct support to the U.S. against Saddam Hussein, learned that two Navy fighters were about to land on his airfield. Thus, the reason for our controllers' considerable reluctance to help us during the divert.

The rest of our stay in scenic Seeb was unremarkable, and the next morning we flew back to the ship. The entire affair did teach me a few lessons. The most obvious is, of course, that you should always know your divert airfields cold, and have the necessary information where you can get to it quickly. Doing so would have saved me some fumbling while trying to get on my bingo numbers and find my way to a foreign airfield.

Second, just because you have done all your homework and know the divert cold, including runway layout, frequencies, arresting gear and lighting, doesn't mean they will be expecting or even welcoming you.

Finally, be prepared for anything when going into a foreign, unfamiliar airfield. Any number of political considerations or other circumstances may complicate the entire procedure and make a nightmare out of what might otherwise have been a golden opportunity to pick up some chicken-shawarma* takeout for the guys.

Despite this, once you've made the decision to go, you can't let the controllers run you out of gas; if the divert has been briefed by CVIC, and there aren't any other alternatives, then let the big boys sort out the politics later.

Lt. Picco flies with VFA-195.

**For the uninitiated, shawarma is usually made from grilled, sliced lamb, served with vegetables, sometimes rice, often in pita bread, kind of like the popular gyro. (All part of the service here at the Naval Safety Center)–Ed.*

A Busy Time in the FCLP Pattern

by Lt. Ernie Spence

Developing routines and habits are the cornerstones for survival in aviation. We practice and practice. Whether it's learning emergency procedures in the simulator or flying the FCLP pattern, repetition builds good patterns. Unfortunately, bad habits can be learned and reinforced as easily as good ones.

I was about halfway through the CQ phase at the FA-18 FRS in Lemoore. By this time, the briefs were "standard," the man-ups were "standard," and while the ball flying may not have been all that pretty, it, too, was becoming "standard."

One night, we were flying the VFR pattern, and things were moving along smoothly. After two bounces, I had Betty telling me about some sort of flight-control problem. A quick check of the flight-control system (FCS) page revealed a single "X" in channel 4 of the right stabilator. The Hornet graphically displays the FCS' status. If any component stops working, an "X" appears on the display to indicate it is failed or degraded. The Hornet's FCS has several levels of redundancy built into it, allowing it to maintain normal handling qualities even if the system is not operating at 100 percent.

Also, if a failure indication appears, the pilot can reset the FCS to clear the fault. If the failure is a transient or false indication, then the reset will return the FCS to full operating capability.

After seeing the "X" and finding no other indications of a problem, I reset the FCS. As I expected, the system reset. Just another stray electron in the system, I figured.

With the next touch-and-go, however, I realized that my assessment of the problem was not entirely correct. Climbing through 300

feet, I felt the jet shudder and the nose pitch down. I say I felt this because I wasn't looking at the HUD; instead, I was looking for my interval. When I did peek at the HUD, I didn't like what it was telling me. The velocity vector was well below the horizon with less than 300 feet. I jammed the throttles up to military, pulled the stick into my lap, and reached for the ejection handle, while giving the jet all the nose-up trim it would take.

Betty was screaming, "Flight controls, flight controls!" I bottomed out at 100 feet. As the velocity vector broke the horizon, and the VSI went from negative to positive, I peeked at the left digital display indicator (DDI) and was not too thrilled to see the cause of my problem: MECH ON.

The Hornet's FCS had degraded to a mode where the flight-control computers were no longer operating. The normal digital inputs were no longer being supplied to the stabilator actuators; rather, a direct mechanical link between the stick and stabs was controlling the jet.

I quickly told tower I would be climbing through the pattern up to 2,500 feet. The plane was flying, but it was not the Hornet I knew. Having trimmed full nose up in the recovery, and without the full assistance of the flight-control computers, I was fighting a severe longitudinal, pilot-induced oscillation (PIO). After chasing the horizon for a few minutes and giving myself vertigo, I managed to calm things down and let paddles and base know what was going on.

Following NATOPS, I transitioned to half-flaps, which improved the PIO problem, and started climbing before trying to reset the FCS. Being fat on gas, I climbed to 10,000 feet before resetting the system, not wanting to experience another low-altitude MECH reversion. The reset was successful, and I set up for a half-flap straight-in approach. About two seconds after weight-on-wheels, the stabs X'ed out again.

Maintenance duplicated the problem on deck several times but couldn't determine the cause. The mechs replaced both flight-control computers and both stab actuators, which we submitted for an engineering investigation.

As I reviewed the circumstances leading up to this event, I noticed how some of my habits made this situation worse than it needed to be. In my limited time flying the Hornet, I had experienced several flight-control cautions and associated "X's" that cleared with a simple system reset. I assumed the initial indication I received that night was another transient anomaly and felt comfortable continuing after the problem had cleared.

While there are times when you have to solve a problem on your own, this really wasn't one of them. There were plenty of outside sources to confer with and no reason not to let base or paddles know what was going on before deciding to continue.

I had also become overconfident in how I was flying the FCLP pattern. Instead of climbing away from the deck at full power until approaching pattern altitude, I was reducing power passing 200 feet and reducing the climb angle, resulting in fairly low rates of climb. Since the reversion to MECH results in approximately a 10-degree nose-down pitch, I could have avoided hurling myself toward the ground by not getting into the habit of lazily climbing to pattern altitude off a touch-and-go.

Lt. Spence flies with VFA-82.

The plane was flying, but it was not the Hornet I knew.

Gus and I Share the Feeling

by LCdr. Scott Wolfe

I wanted to be an astronaut when I was a kid, and I vividly remember watching the TV coverage of their triumphant return after each mission. Now I have something in common with one of the astronauts –Gus Grissom, my hero and unknowing mentor–and it's not just the Tang I drank.

I was relieved the day the Navy helicopter community decided to take the emergency flotation bags off the H-60s, probably more than any other helo pilot. Numerous maintenance and aircrewmen have accidentally, and embarrassingly, inflated the float bags in hangars or out on the flight line, but I have the distinction of being the only H-60 pilot to have inflated them in flight, intentionally or otherwise. Yes, that's right, while airborne.

There I was, flying low over the Caribbean Sea, a fairly new HAC enjoying an easy, laid-back, and short underway period aboard an FFG as part of the mighty Orange Forces going up against the Ike battle group. Our main airborne mission was to target the high-value units for our ship so we could simulate an over-the-horizon Harpoon shot. The flying was great, and the exercises were challenging, with very little stress for us, because we were supposed to lose anyway.

One early evening, we had magnificently infiltrated the battle group (I could tell you how, but it's classified) while they were transiting the Virgin Passage, and we had just radioed the positions of all the ships when it started getting dark. We had been using our stabilized binoculars. Earlier, I had commented to my crew about the awkwardness of the neck strap. It was hard to set the binoculars down for a second without getting the strap caught on something.

Since it was getting dark, I decided to put the binoculars away. They were sitting on the center console, and when I picked them up, there was a loud bang like a shotgun, followed by a loud, airy, whooshing sound. For about three seconds, I had no idea of what was going on; I was terrified. We were at about 500 feet and 90 knots.

Instinctively, I took the controls, and the aircraft shook from the vibrations. I then realized we were still flying, and the vibrations decreased. I let the copilot take the controls and tried to figure out what had just happened. I looked out the window and could just make out the outline of the port float bag, violently banging up and down on the side of the aircraft. The emergency flotation bags had inflated! Holy cow, I knew that this one was definitely not in the PCL! Time to do some of that HAC stuff.

I told the copilot to slow down, and as we got below 50 knots, the float bags stopped banging so violently; at least they stopped scaring the heck out of us. We discussed the situation as a crew, and, as we weren't far from our ship, we asked them to set emergency flight quarters. They asked why, but I did not want to tell them it was because of the two big balloons sticking off the sides of the aircraft.

What would my OinC say when we got back? How would I explain this one? We eventually told the LSO what was going on so he could understand that we were not in immediate danger of going in the water—at least, we didn't think so. When we got to our ship, they weren't ready for us to land, so we had to orbit a mile aft of the ship while they got set up. Each time we came around into the relative wind, in a right turn, the left float bag started banging around like it was going to rip off the aircraft. What would happen if it ripped

off? It was made of Kevlar and could go up into the main or tail rotors.

Finally, they gave us a green deck, and we came in for a landing. As we got below 30 knots, the float bags finally settled out and stopped banging around. As we came across the deck, my OinC only said one thing, "My helo has the mumps!" Unfortunately, we were then down for night and IMC flight for the rest of the cruise because we had lost our port and starboard position lights, which were on the float-bag covers that blew off as the float bags inflated. But the good news is that we brought both the crew and helo back safely. I learned a valuable lesson on that one: If something is not right, don't ignore it; fix it. I should have taken that neck strap off earlier in the day, and it would not have had a chance to ruin my night.

Now you know why Gus Grissom is my hero; and by the way, I believe Gus said it best: "It just blew!"

LCdr. Wolfe flies with HSL-48.

Hummer-Hole Hazard

by Lt. Armin Heravi

One of the benefits of flying E-2s is that our aircraft are almost always spotted in the "Hummer hole," beside the island. Because of the valet parking, we are rarely forced to wander about the flight deck looking at numbers. Since E-2s generally launch at least 15 minutes before everyone else and recover last, another benefit is that we walk to the aircraft at a time when the flight deck is fairly quiet. Because of these benefits, however, Hawkeye aviators may not be as adept at walking around a busy flight deck as other aviators in the air wing.

We were scheduled for the first launch of the day. Our mission was to run a medium-sized strike against the carrier. After a thorough brief, we suited up and began walking up to the flight deck. To expedite taxiing and launching, the flight deck recently had begun spotting the first E-2 to launch just aft of JBD 2, facing the starboard side of the ship.

Because we would man up, start engines and be airborne 15 minutes before the others, the new spot didn't seem like it would pose any problems. Five minutes before our scheduled launch time, however, I was close to putting my foot through the computer, which had refused to load after more than 20 minutes of troubleshooting.

As mission commander, I elected to down the aircraft and man a spare that had been spotted in the Hummer hole. When I had

climbed out of the aircraft, it seemed like all hell had broken loose. The noise was deafening. Hornets and Tomcats—each with extremely large intakes—were taxiing all around our aircraft on their way to the waist cats. One of the Hornet pilots taxiing past looked down at me and gave me the thumbs-down signal. I nodded to confirm that our aircraft was down. I'm sure he was as surprised to see an E-2 guy as I was to be there.

Vikings were starting engines beside us. The deck was setting up to shoot no-loads on cat 1. Maintenance personnel were running about trying to fix other planes. Yellowshirts and blueshirts were busy moving aircraft around the deck. It was, in essence, a normal day on the flight deck. The only difference was that I was not in the safe confines of the CIC. Rather, I was alone in the middle of a sea of non-skid and moving aircraft.

Within minutes, the situation quickly deteriorated to "What the hell am I doing here?" I had been inching my way aft with no way to get across the seemingly endless line of Hornets heading to the waist cats. I thought, "As long as I stand next to this turning Hornet and he doesn't move, I'm OK." Of course, the Hornet started moving. I was alone again. Could it get any worse? You bet.

Above the whine of the jet engines, I began to hear a low humming noise that was getting louder. I looked up and saw the C-2 taxiing toward me. Unless I moved quickly, I was going to get whacked by one of the Greyhound's props. Unfortunately, I still had no

Within minutes, the situation quickly deteriorated to "What the hell am I doing here?"

place to go. With the Hornets taxiing aft, I was worried about getting blown down right in front of the COD and into its props. The copilot of the C-2 looked down at me and waved, basically letting me know that he saw me and was watching out for me. Yet, I still had to cross the line of Hornets. Finally, an FA-18 heading aft was turning and directing his jet wash elsewhere. In the brief amount of time before the next aircraft came up, I dashed across the line of taxiing Hornets in this unseemly game of Frogger. At last, I was safe in the comfortable confines of the Hummer hole.

I took a deep breath and relaxed because only then did I realize that I had been unconsciously expecting to be hit by something during the entire trip.

In our crew debrief, the main topic of conversation was the journey to the Hummer hole. It turned out that I wasn't the only one having problems. Having gotten across the line of Hornets, the other crew members found themselves uncomfortably close to the intakes of a turning Prowler. In retrospect, I'm not sure what I could've done to prevent this near-disaster. That is not to say that I didn't learn some valuable lessons.

Sailors relearn the first three lessons every day on deployed carriers: When on the flight deck, never relax, keep your head on a swivel, and watch out for each other. The fourth lesson is that naval aviators tend to concentrate solely on ORM issues or lessons learned that affect only the flying portion of the flight. In particular, when on the boat, the most dangerous part of the flight may not be actually flying, but simply getting to the aircraft.

Lt. Heravi flies with VAW-116.

The Bag-Ex Could Have Bagged Us!

by Lt. Mike MacNicholl, with Lt. Darren Donley

It started as we read the schedule for the next day just before crawling into the rack. We had an early after noon, front-seat bag-ex (a good deal), a landing at 1630, a NATOPS lecture I was briefing at 1715, a Personal Development Board at 1815, then the topper: I was the briefer and lead ECMO 1 of a night section approach hop at 1915. This was the last night event of a six-month Gulf cruise. We had all been warned that this time was a very dangerous part of cruise, but it's difficult to shake that we-can-hack-anything attitude.

My day was very busy, and ending it with a night hop was probably not wise, but my attitude prevented me from saying anything to my chain of command. On top of this, the night event was only a 45-minute cycle. Most squadrons were going to launch, zorch around for 10 or 15 minutes to burn their gas, then head directly to marshal. However, training quals were always needed, so ops added the night section approaches as the scheduled mission.

Our squadron had also recently changed aircrew combinations. Although our procedures are standardized, a change in aircrew is always a challenge.

With a full night's sleep, I headed down to our ready room for the brief by my new pilot (a mid-tour, Cat 1 pilot). The bag-ex went as advertised, with six near-perfect traps. However, my pilot felt drained from the 30 minutes of ball flying, so he retired to his stateroom for a quick nap while I pressed on with my busy day.

My NATOPS lecture went fine with not much heckling from my fellow JOs, and my pilot offered to write down a briefing outline for the evening hop, now just one hour away. This would help, but I knew I'd still be rushed. I excused myself 15 minutes before my brief from the Professional Development Board, also being held in the ready room, and tried to quickly put up a decent briefing board.

So there I was: frantically putting up a briefing board on the air wing's last night cycle of only 45 minutes, doing night section approaches after a recent aircrew change. Since we'd been in the Gulf, the last section approach my pilot had done was three months earlier. In retrospect, this event was certainly not the time to be practicing section approaches at night.

The brief went fine, and only a couple items needed to be changed because of the short cycle time. We decided to shift the rendezvous from overhead to 30 miles from the ship to save set-up time. It had been quite a while since we had done section approaches, but we covered the important points.

On deck, we altered the rendezvous radial to provide more separation from the marshal radial, and the launch was uneventful. We rendezvoused at 8,000 feet for weather, and our wingman (the more senior section leader) reminded us to descend to 7,000 feet before lowering our landing gear because of a NATOPS limitation.

Because we were limited by time, we quickly went through the approach-to-landing checks, settled in to a clear area, and dirtied-up. The wingman followed our signals and maneuvers nicely, so we immediately began our descent. Upon reaching our 6,000-feet waveoff altitude, my pilot went to full power with the speed brakes in. With 150 KIAS, we started to climb. At this point, I was looking at our wingman from the right seat to ensure he was following us through the maneuvers. At that moment, my pilot announced over the ICS, "Two positive, here comes the gear."

I felt a normal shudder in the jet, but saw that our wingman still had his landing gear down. I barely had time to notice, but the nose started to pitch up as our wings started to clean up. The pilot had grabbed the flap lever instead of the gear handle and had raised the flaps and slats. The approximate stall speed of the aircraft was 152 KIAS, and we were around 160 KIAS when the pilot discovered his mistake. This was too close for comfort for all of us involved. Fortunately, the pilot felt the jet getting sluggish as the flaps were moving, pushed the nose over to counter the pitch-up, and lowered the flaps.

We finished the whole approach with the wingman still hanging on, then swapped the lead and had our wingman lead us through another quick approach. This time, the pilot made a conscious effort to raise the gear first. Before we knew it, our time was up, and after just one turn in the marshal stack we landed with an OK 3.

How did we get in that situation? Most importantly, why did we do section approaches? The last night hop of cruise, a short 45-minute cycle, a late land time, a recent aircrew change, and the last section approach for my pilot had been more than three months earlier. Anyone of the eight aircrew in the brief should have at least recommended canceling the section approaches. We all thought we could hack it, and it nearly killed us.

Second, the pilot should have realized his limitations. This was a perfect time to do a little chair flying to reinforce those forgotten motor skills. His habit pattern was to raise the flaps after the jet had gained enough airspeed after a catapult shot. The gear was always an automatic reaction after leaving the deck, so although he said, "Two positive, here comes the gear," his hand was resting on the flap lever.

Third, as the front rightseater, I should have been backing up the pilot during all the configuration changes. My primary job is to be a copilot, but my scan during the maneuver was mostly outside at the wingman. A better scan would have been: "Two positive, here comes the gear" and a quick glance to watch the pilot move the correct handle.

The other factor that heavily contributed to my lack of situational awareness was my fatigue. I should have raised the BS flag the night before or even that morning. I could have gotten out of one of those meetings, or had one of my JO buds brief the hop for me. Many times, we forget how dangerous flying is and allow more of our energy and focus to be directed elsewhere.

My scan during section approaches is different now, as well as my attitude for the schedule. Don't let the operations department box you in, and don't let anyone kill you.

Lt. MacNicholl and Lt. Donley are an ECMO and pilot, respectively, and fly with VAQ-136.

No Fuss, No Muss to CSC

by Lt. Brian Bronk

The Hornet's advanced systems can give a false sense of security. The loss of one system interface can affect many displays and aircraft capabilities. It's up to the pilot to realize the effects on the aircraft and fall back on basic aviation skills and systems knowledge to bring the jet back on deck.

As a brand-new fleet FA-18 pilot, starting workups off Virginia, I was on my first mission of the line period. There was a 2,000-foot, broken-to-overcast layer for the Case III launch and recovery. After the cat shot, I heard the master-alert tone and noticed that I had CNI and VOICE AURAL cautions. With nothing but a pitch-black, moonless night in front of me, my biggest concern was flying away from the water.

I climbed through 2,500 feet and reported, "On top, kilo." As departure cleared me to switch to Strike, I called up the BIT page, then switched to the preset radio frequency. After transmitting on what I thought was Strike, departure told me I was still on their frequency. Then I saw indications of a Control Signal Converter (CSC) MUX FAIL.

I reported my situation and told departure I would remain overhead and troubleshoot. Comm 2 was completely out, and comm 1 would not change from the preset frequency. Also, the TACAN and up-front control panel didn't work even though the TACAN bit showed "GO." I had to come up with an alternative navigation plan.

I broke out my pocket checklist and looked up CSC FAILURE. The PCL simply states some or all of the comm and nav systems may be out. Fortunately, my squadron had just had pilot training and discussed CSC problems. From that, I knew that UFC backup wouldn't work but thought I'd try it anyhow. The training was right: it didn't work.

Through the broken layer, I kept the ship in sight and remained overhead until the end of the cycle. Departure then asked me to hold 20 miles aft of the ship. An air-to-ground radar lock helped find the ship as I began my approach, referencing the ship's final bearing

on my track symbology. I realized that my ILS wouldn't be displayed on the HUD, and I couldn't get an ACLS lock-on. I would have to rely on my systems, along with the controller, on a mode III approach. The landing was uneventful.

Before this experience, I had very limited knowledge of the CSC and indications of its failure. With the loss of so many critical NAV systems at once, the pilot must recognize the cause of the problem early and come up with a plan to recover the aircraft.

The CSC interfaces with navigation and communication systems. This interface converts analog signals to a digital format and digital back to analog. If the CSC fails, you may not be able to communicate and operate the TACAN, ILS, beacon, ADI, altimeter, IFF, and comms. Some or all of these systems may be completely out, and there is no way to know for sure which ones. The problem may be a result of the box itself failing or an individual comm/nav component transmitting bad data and affecting the entire system.

The most recent NATOPS change provides for a good discussion of the CSC MUX failure. I also recommend getting with your squadron's aviation technicians. They know the CSC and related systems inside and out.

Lt. Bronk flies with VFA-83.

Photo Composition by John W. Williams

HIFR Horror

by Lt. Brian Nichols

It was another typical summer day in the Arabian Gulf. The temperature was approximately 130 degrees F, and we were flying a mission in the north, supporting Operation Southern Watch. While monitoring the shipping traffic near the Iraqi coast, we were notified by the ship that the "Desert Duck" H-3, which had flown out to drop off mail, had engine trouble and was hard down on our flight deck. Our other helocopter was in the hangar, and the H-3 could not be moved into the hangar by normal means, so we were suddenly homeless. There was another ship in range, but it was a *Perry*-class frigate that had not been granted a waiver to land the Seahawk.

At this point, we had already burned half our fuel, and finding somewhere to land at the end of the mission was the task at hand. Kuwait City's International Airport was in range, and from the list of choices, it seemed to be the best place to call home until the Desert Duck was flying again.

We called the ship to give them the details of our plan. We had decided that we would return to the ship to hoist another crew and a few maintainers for our operations out of Kuwait City. But the ship denied our request and told us that they wanted us to keep radar contact on a surface vessel that was traveling along the Iraqi coast. Instead of refueling at Kuwait, they wanted us to do a HIFR (helicopter inflight refueling) from the frigate before heading to them for the passenger pickup. After a heated debate about their idea versus ours, we lost and headed toward the frigate. We figured that we would set a bingo that could get us back to Kuwait and give the HIFR a try.

As the ship prepared to refuel us, we went though our checklist. I was sitting in the right seat, and my aircraft commander was in the left. He checked the chart in the pocket checklist and decided how much fuel we

Lance Kirk

would take on. I had never been involved with an actual HIFR and was nervous, but the pilot in the right seat is the one who flies during a HIFR because it is easier to hold position on the ship from the right seat.

As we made our approach to the ship, we turned on our contingency power, which stopped the small amount of air conditioning in the aircraft cockpit. I hovered over the flight deck for quite a while, because of the ship's crew was having trouble hooking up the refueling nozzle the correct way. Once the hose was in the helicopter, I slid left and descended into position.

Hovering at 15 feet over the ocean, I found the salt spray quite distracting as I struggled to hold my position with the ship. With the heat in the cockpit, the windshield wipers, the exertion of holding the hover while being attached to the ship by a rubber hose, and the strain of trying to look through the salt spray at the ship to avoid a collision, I quickly had a fountain of sweat pouring down my face like the character in the movie "Airplane."

Finally, after about 15 minutes of holding this position, the fuel level began to rise. The relative winds of the ship were slightly to starboard, which also caused a turbulence burble right where we were trying to hover. I continued to hover while my copilot backed me up on the gauges.

I suddenly felt that the helicopter was descending. I noticed the flight deck was rising slightly, and I pulled collective to stop the descent. No effect.

I pulled more collective. Nothing. I glanced down to see about 7 feet on the radalt and pulled a lot of collective to avoid settling into the water.

"Power! Power!" the aircrewman yelled.

"Yes, I know," I thought. "I'm giving it power, but it's not doing anything."

We leveled off, while drooping rotor speed, stopped the refueling, and quickly transitioned to forward flight. We flew around for a few minutes to catch our breath and to relish the fact that we were still flying instead of swimming.

It turned out that we had taken on too much fuel for the heat and humidity we were flying in and fell victim to settling with power. HIFR is a high-risk activity, especially "wet" HIFRs. We had failed as a crew to take a good look at the chart before deciding how much fuel to take on. By this small oversight, we had almost put a perfectly good helicopter at the bottom of the Arabian Gulf. Performance charts are in the pocket checklist for a good reason. Use them.

Lt. Nichols flew with HSL-44 at the time of this story. He is currently assigned to NAS Brunswick's air operations department.

"Power! Power!" the aircrewman yelled.

Christian Ekelund

My Hornet Cobra Maneuver

I was excited because this was going to be my first afterburner catapult shot.

by Ltjg. Robert Buchanan

I was sitting at midrats when I overheard several other pilots talking about how the new guy from one of the Hornet squadrons tried to kill himself off the catapult earlier in the day. I knew instantly whom they were talking about, since I'd had a similar experience that morning.

I had joined the squadron in the Arabian Gulf just 10 days before, but I was beginning to feel more comfortable around the ship. That morning, another JO and I were scheduled for some unit-level training, dropping Mk-83 inerts on smokes. I was excited because this was going to be my first afterburner catapult shot. We thoroughly briefed the procedures and hand signals I could expect from the shooter. The flight lead also mentioned that the aircraft would settle a little more than usual because of the extra weight of the ordnance. This settling had been an issue in the past; the Air Boss regularly expressed concern for Hornets settling during heavy catapult shots.

Before walking to the PR shop, we calculated stabilator-trim settings, using each aircraft's weight, center of gravity and 15 knots of excess end speed. Armed with my weight chit and my 20-foot nose-up trim calculation, I walked up to flight-deck control, dropped off my weight chit, and walked to my jet. After a normal start sequence, I taxied to the catapult, completing my takeoff checklist on the way. I went into tension as I anxiously awaited the signal for max afterburner from the shooter.

After one more cursory check of the cockpit, I saluted and prepared for the impending jolt. I had developed a habit of putting my right hand on the towel rack for launch, because instructors at the FRS had stressed it so much during CQ. This time, however, perhaps because of nervousness and not

wanting a call from the Air Boss, or not having a new set of habits for afterburner shots, I placed my hand on my kneeboard. Before I knew it, I was screaming down cat 3.

In the excitement of the moment, I subconsciously pulled the stick back. The jet pitched up rapidly to a very uncomfortable, nose-high attitude with an AOA tone ringing in my helmet. Lacking any other ideas, I released the stick, hoping the aircraft would recover itself. The aircraft began a series of violent oscillations at 60 feet AGL that would frighten even the dumbest pilot.

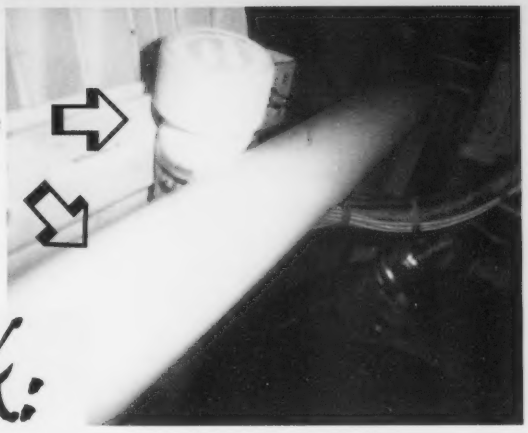
The oscillations began to dampen out after about three seconds, and once again I was in control of the aircraft.

As I climbed away, the Air Boss, knowing exactly what I had just done, asked if I was having any problems. The flight ended with an uneventful recovery, but could have had more tragic consequences than the much-deserved harassment from by other pilots.

It's important to remember that a trim input of 18 degrees, nose up gives you a maximum capture AOA of 12 degrees at any value above 18 degrees; nose up only affects the pitch-rate change to capture AOA. NATOPS catapult-launch trim graphs provide the aircraft with a consistent 10-to-12-degree-per-second pitch rate, using center of gravity and excess end speed. Any inputs by the pilot at launch create a dampening effect in the opposite direction to counter the excess pitch-rate change. Don't let the anxiety of doing something new cause you to break normal habit patterns.

Ltjg. Buchanan flies with VFA-195.

"Yes, that's an aspirin bottle, and yes, those are rudder cables."



You Pick:

Cheap Lesson or Expensive Mishap

by LCdr. Chris Plummer

"Wake up, wake up, boss. We gotta talk." That plea came from my roommate, the MMCO, early one morning as we neared the end of a six-month cruise in the Persian Gulf. As I tried to shake off the previous night's sleep, he showed me a small aspirin bottle.

I blankly stared at him and the bottle, at a total loss until he showed me a digital picture of the same aspirin bottle wedged between some cables. When I realized I was looking at flight-control cables, the horrifying perception that five of my squadronmates could have been killed hit me like a Mack truck. I was awake now.

The MMCO said that the bottle had been discovered the previous night during a Phase B inspection. Had we been skirting death on every flight since the beginning of the cruise, or had the bottle just recently found its dangerous resting place, spelling disaster for the next crew who manned this marked Hummer? Regardless, a timely maintenance inspection and an astute airframer might have prevented losing an aircrew and aircraft.

This aspirin bottle was wedged against a rudder cable in the nose of the aircraft, behind the pilot's rudder pedals. It undoubtedly lodged there after flying forward during an arrested landing. The phase inspection also produced a metal fastener from a helmet and a small radio knob. The helmet piece and the aspirin bottle had no outstanding MAFs. The radio knob did.

As squadron maintenance officer, I had noticed a disturbing trend during the past year, and this discovery unfortunately fit right in. Items brought into the aircraft by aircrew remained unaccounted for until discovered by maintenance personnel, whereas items lost by maintainers were scrupulously documented.

We have all heard the old maxim of naval aviation: FOD kills. Most of us carry things into the airplane—pens, grease pencils, nasal spray, cameras, loose change, whiz wheels, pocket knives. The list is endless. Unlike maintenance personnel, who account for everything they bring in and out of the aircraft, aviators are on a sort of honor system.

If an aviator stuffs an extra ballpoint pen into his helmet bag and forgets it, he'll only remember when it comes flying out of his helmet bag on an arrested landing. The Naval Aviation Maintenance Program says the FOD Prevention Program is an all-hands effort and must be supported by every person assigned to the command. Ideally, aviators and maintenance troops alike should be equally accountable to the CO with respect to FOD. In reality, however, an aviator who leaves his kneeboard in the aircraft owes some PR a six-pack, whereas a trooper who leaves a flashlight in the aircraft goes to mast.

You can't just say that aviators are above the law because we are only hurting ourselves. We don't own these aircraft and are putting more than just our own lives at risk. The pen unintentionally left behind could kill your best friend and orphan his family.

I briefed our safety officer and the chain of command on the incident. Hours later, the safety officer showed all the aircrew the aspirin bottle and the pictures. The ready room discussed aircrew-induced FOD. The pictures of the bottle wedged behind the rudder cable had a sobering effect. We all brought our helmet bags to the ready room and purged them of loose, non-essential items. It was an invaluable lesson learned at no cost.

LCdr. Plummer flies with VAW-117.

LCdr. Enderson Moves On

As this issue arrives in ready rooms, we at the Naval Safety Center, and especially the publications branch, will have said good-by to LCdr. Mark Enderson. He arrived for a second tour at NSC in 1997 and served in a variety of positions, including Media Department Head, *Approach* editor, Command Public Affairs Officer, and head of the Graphics Division.

His varied experiences in the fleet let him operate at many levels, and coupled with his easy-going nature and team spirit, made him a primary player throughout his time here with us at the magazine. We'll miss him, and we wish him good luck as he and his family head for Keflavik.

Class A Mishaps

Aircraft	Command	Date	Fatalities
AH-1W	HMM-261	01/31/00	0
Helicopter hit the ground after a bird strike.			
CH-46E	HMM-265	02/09/00	0
Aircraft had an in-flight fire in a DLQ pattern and recovered aboard ship.			
F-14B	VF-102	03/17/00	0
Aircraft departed controlled flight and crashed into the sea.			
F-5E	VFC-13	03/19/00	0
Aircraft left the runway and flipped on its back after its tires blew during rollout.			

Milestones

H&HS, MCAS Futenma	09/15/99	50,000	27.5
VMFA-142	11/20/99	58,000	22
HMM-774	01/21/00	58,000	30
MASD ANDREWS	01/22/00	48,000	17
VMGR-234)	02/09/00	96,000	29
VMGR-452	02/12/00	41,000	11
VAQ-131	02/14/00	4,800	03
VAQ-135	02/24/00	6,300	04
VAQ-138	02/24/00	31,500	18
VP-40	02/28/00	216,000	33
4th MAW	03/01/00	140,000	03
HS-8	03/15/00	61,000	19
HS-14	03/15/00	17,000	05
VP-10	03/15/00	172,500	27
VAW-113	03/20/00	65,000	32
VS-38	03/21/00	51,900	13
HMH-463	03/22/00	14,000	07
VFA-125	03/27/00	145,000	08
VP-5	03/27/00	124,000	22
HMH-363	03/27/00	12,300	6
VQ-3	03/31/00	185,1002	2.8
VFA-82	03/31/00	55,000	12
VFA-151	04/03/00	16,000	04
VAQ-133	04/03/00	5,000	04

Class A Flight-Mishap Rate

FY 00(thru 3/31/00) **FY 99(thru 3/31/99)**

COMMAND	No.	RATE	No.	RATE
NAVY/MARINE	14	2.02	9	1.22
All Navy	10	1.90	4	0.71
All Marine	4	2.38	5	2.80
NAVAIRLANT	4	2.94	2	1.34
NAVAIRPAC	0	0.00	1	0.64
MARFORLANT	1	1.86	1	1.57
CNATRA	1	0.57	1	0.55
NAVAIRRES	3	5.66	0	0.00
4TH MAW	0	0.00	0	0.00
NAVAIRSYSCOM	1	6.25	0	0.00
NON-TYCOM	1	20.92	0	0.00

Navy and Marine PMV Fatalities

FY97	FY98	FY99	Total
135	103	122	360

227 Died at night
180 Died on a weekend
116 Were not wearing a seatbelt
111 Died because of a speeding vehicle
109 Were in wrecks caused by drunk drivers
66 Were killed by fatigued drivers

Statisticians found the following age factor: If you are 26 years old or younger, your chances of dying in a motor-vehicle crash are twice those of someone older than 26.

Classic

BROWNSHOES IN ACTION COMIX

"The kind real aviators like"

Contributed by Lt. Ward Carroll

"Just like his last ten passes: low flat all the way, overpowered in close, four-wire on the fly, no-grade."

The CAG LSO noticed a disturbing trend in one of the second-cruise lieutenants...

The LSO debrief was a bit unorthodox as the young aviator in question was forced to empty his navbag...

"What's this? Does this tape belong to you?"

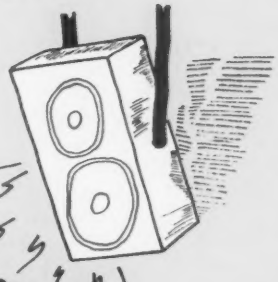
"Yeah. I listen to it during alerts. What about it?"

It was only a hunch...

"SDO, play this tape backwards, if you please."

(Fortunately, the Coffee Mess Officer had had the foresight to procure a tape deck for the ready room with backwards-play capability.)

Bingo...



"RMZXYCTZ ERP - Spot the deck - - Pull power in the wires - EEP OP - Ignore the LSO..."

Subliminal messages were the culprit...

"Thanks, Paddles. I owe you one."

"Just keep it off the ramp and stick with safe music, shipmate."